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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/684,352	10/10/2003	Jun-Yeob Song	11281-013-999	3339
20583	7590	07/10/2007		
JONES DAY 222 EAST 41ST ST NEW YORK, NY 10017			EXAMINER SILVERMAN, ERIC E	
			ART UNIT	PAPER NUMBER
			1615	
			MAIL DATE	DELIVERY MODE
			07/10/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/684,352

Applicant(s)

SONG ET AL.

Examiner

Eric E. Silverman, PhD

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 May 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 4-28-07
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Applicants' response, filed 5/18/2007, has been received. Claims 5 – 20 are pending.

The claim rejections discussed in the previous office action are **moot** since those claims are cancelled. The Examiner regrets having overlooked the preliminary amendment filed 10/10/2003, wherein claims 1 – 4 were cancelled. Claims 5 – 20 are treated on the merits in this action.

Claim Objections

Claims 17 – 20 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. These claims recite a future intended use for the article of claim 5. Since a future intended use does not impart any structural or functional limitations on an article, claims 17 – 20 do not further limit the article of parent claim 20.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422

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F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 5 – 20 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 – 4 of pending Application No. 10/542,168. Although the conflicting claims are not identical, they are not patentably distinct from each other because copending application requires two layers each layer having different pore sizes. However, since the product of instant claims will clearly have pores of different sizes (that is, the pore size will not be uniform), instant claims overlap substantially with copending claims, and each set of claims renders the other obvious.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 5 – 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 3,531,265 to Dille in view of KR 1999-0080808 (the English translation prepared for USPTO Dec. 2006 is relied on).

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Dille teaches hollow carbon spheres which are porous, and are about 70 millimicrons (that is, 70 nm) in diameter, reading on the carbon balls of instant claims 5, and 15 – 20. The spheres are noted for their large porosity and for being good absorbers (col. 4, lines 1 – 30). Based on the high surface area noted for these carbon spheres and the fact that their size is commensurate with that of instant claims, they are understood to be mesoporous, although Dille does not use this term and may not recognize them as such.

What is lacking is a teaching of impregnating the spheres.

The '808 reference teaches the use of carbon for reducing odors. The reference teaches that impregnating carbon with metals and salts, such as Cu, Fe, Mn, CaCl₂ and the like increases the activity of the carbon. The impregnated material is included from 1 to 30% by weight (page 7), preferably from 5 – 20% by weight (page 8), reading on instant claim 13.

It would be prime facie obvious to a person of ordinary skill in the art at the time of the invention to impregnate the metals into the carbon spheres of Dille as taught by '808. The motivation is to increase their ability to absorb odors. Since '808 teaches how to effect impregnation, the artisan would enjoy a reasonable expectation of success.

Response to Arguments

Applicants' arguments have been fully considered, but they are not persuasive.

Applicants' argue that mesoporous materials were first recognized in 1991, as evidence by the Garcia reference (see IDS filed 4/26/2007). Applicants' therefore aver

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that the Dille reference does not necessarily disclose mesoporous carbon balls. In response, it is first noted that mesoporous carbon and methods for its preparation were recognized at least as early as 1981 (the filing date of US 4,439,349 "Mesoporous Carbon" cited on TO 892). Further, while Applicants' may have shown that Dille did not *recognize* the possession of mesoporous carbon spheres, they do not show that Dille did not possess such spheres. On the contrary, the spheres of Dille seem to have many of the salient properties of mesoporous structures. For example, instant claims define a diameter of mesoporous carbon, and Dille's carbon spheres are within this diameter. Further, the Garcia reference teaches that mesoporous materials have surface areas of upwards of 700 square meters per gram. Dille's carbon balls are taught to have surface areas of 600 – 800 square meters per gram (lines 19 – 21). Although Dille does not recognize the pore size of these carbon balls (it is believed that at the time the Dille reference was published the technology for measuring pores of less than 10 nm diameter did not exist), it follows that since Dille's carbon spheres have the same surface area and diameter as mesoporous materials, they also have pore sizes commensurate with that of mesoporous materials. MPEP 2144 notes that when the evidence of record indicates that a particular feature of the prior art is inherent, Applicants' may be required to prove that it is not inherent. This applies to features relied upon for rejection under both 35 U.S.C. 102 and 35 U.S.C. 103. A showing that the prior art does not recognize that it possesses these features is not sufficient; a prior art rejection does not require that the prior art recognize features that are inherent, so long as solid technical reasoning supports the notion of inherency.

Claims 5 – 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,439,349 to Everett et al, in view of KR 1999-0080808.

Everett teaches mesoporous carbon (abstract, title) as useful for absorbing odorous substances, such as benzine (figure 1), and benzene (figure 3). The particle size is preferably between 58 and 230 nm, commensurate with that of instant claims, and the particles are spheres (col. 3, lines 32 – 51). Since the carbon spheres are made by making a spherical template, polymerizing a carbonizable polymer over the template, and then carbonizing the carbonizable polymer and degrading the template (example), which is the same as the method of instant specification, the carbon spheres of the art are understood to be hollow, and to have a shell size commensurate with that of instantly claimed carbon spheres (claim 16).

What is lacking is a teaching of impregnating materials in the spheres.

The teachings of the '808 reference are discussed above.

It would be prime facie obvious to a person of ordinary skill in the art at the time of the invention to impregnate the metals into the carbon spheres of Everett as taught by '808. The motivation is to increase their ability to absorb odors. Since '808 teaches how to effect impregnation, the artisan would enjoy a reasonable expectation of success.

Conclusion

No claims are allowed.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric E. Silverman, PhD whose telephone number is 571 272 5549. The examiner can normally be reached on Monday to Friday 7:30 am to 4:00 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Woodward can be reached on 571 272 8373. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Eric E. Silverman, PhD
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MICHAEL P. WOODWARD
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600